

IN THE CLAIMS

1. A water filtration system, comprising:
 - a pressure vessel having an inlet port and an
5 outlet port for raw water and at least one outlet port
for water permeate; - a reverse osmosis membrane disposed within the
pressure vessel and providing for cross-filtering of
water passing from said inlet port to said outlet port;
10 and
an electrostatic-field generator disposed
within the pressure vessel and providing for a voltage
gradient that reduces biofouling of the reverse osmosis
membrane.
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2. The system of claim 1, wherein:
 - the pressure vessel is a cylinder with said
inlet and outlet at opposite ends; - the reverse osmosis membrane is a spiral wound
20 type with an open central core; and
the electrostatic-field generator comprises a
positive electrode and a ground disposed in said central
core.
- 25 3. The system of claim 1, further comprising:
 - a high voltage direct current power source
connected to the electrostatic-field generator.
- 30 4. The system of claim 3, wherein:
 - the high voltage direct current power source is
such that it maintains said voltage gradient when water
is standing still within the pressure vessel.

5. A method for reducing biofouling of reverse osmosis membranes, comprising:

passing water through a pressure vessel having ports for raw water and at least one outlet port for
5 water permeate;

disposing a reverse osmosis membrane within said pressure vessel that provides for filtration of water passing from said inlet port to said outlet port;
and

10 generating an electrostatic-field within the reverse osmosis membrane that provides for a voltage gradient inside said pressure vessel and that reduces biofouling of said reverse osmosis membrane.

15 6. The method of claim 5, further comprising:

maintaining said electrostatic-field during idle periods between passing water through said pressure vessel.

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